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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 986,014	11 07 2001	Kazuhiko Mishima	684.2436C1	4575

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EXAMINER

KIM, PETER B

ART UNIT PAPER NUMBER

2851

DATE MAILED: 05 14 2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/986,014

Applicant(s)

MISHIMA, KAZUHIKO

Examiner

Peter B. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 19-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 08/782,141.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____

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DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: On page 20, line 7 and 9, both microscope and mask stage have the reference number "4." On page 25, lines 1-6, mark, "CMI" is disclosed; however, it is not one of the three types of marks disclosed on page 22.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 19 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Tokunaga (6,285,437).

Tokunaga discloses a scan type exposure apparatus and method comprising a first stage (22) on which a first object (reticle) is placed; a second movable stage (20) on which a second object (wafer) is to be placed; a projection optical system (PL) for projecting a pattern of the said projection optical system, while the pattern of the first object is projected by said projection

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optical system on to the second object (col. 7, line 41-col. 8, line 13); storing means for storing therein a data corresponding to a change in exposure condition as measured beforehand and to be produced by moving at least one of said first and second movable stages (col. 8, line 14-col. 10, line 5,); and control means for controlling drive of said first and second movable stages in an actual exposure process (62, 56, 52, 50, 46), while reflecting a correction value, as determined on the basis of the data stored, to the drive of at least one of said first and second movable stages (col. 10, line 6-col. 11, line 9). Because developing the object pattern exposed by the scan type exposure apparatus is necessary step in all photolithography method, the developing step is inherent in the Tokunaga reference.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tokunaga in view of Iwamoto et al. (Iwamoto) (5,448,333).

Tokunaga discloses the claimed invention as discussed above. However, Tokunaga does not disclose determining the correction value with respect to deviation of the projected image of or the shot areas of a substrate with the pattern formed on the mask by measuring the deviation

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of the projected image pattern of the first object upon the second object. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to determine the correction value based on the deviation of the projected image as taught by Iwamoto because the method of Iwamoto corrects the discrepancy in alignment accurately without lowering the throughput as taught in col. 2, lines 21-43.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tokunaga in view of Kato et al. (Kato) (5,640,227).

Tokunaga discloses the claimed invention as discussed above. However, Tokunaga does not disclose determining the correction value with respect to a focus error of the projected image. Kato discloses in the abstract minimizing defocusing by projecting image of the pattern of the first object upon the second. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to determine the correction value with respect to a focus error of the projected image as taught by Kato because when the scan motion of the stages causes the apparatus to become defocused the method of Kato minimizes defocusing of the apparatus as taught by Kato in col. 1, lines 60-65.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Kim whose telephone number is (703) 305-0105. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams, can be reached on (703) 308-2847. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read "P.B. Kim", with a stylized flourish at the end.

Peter B. Kim
Patent Examiner
May 12, 2003